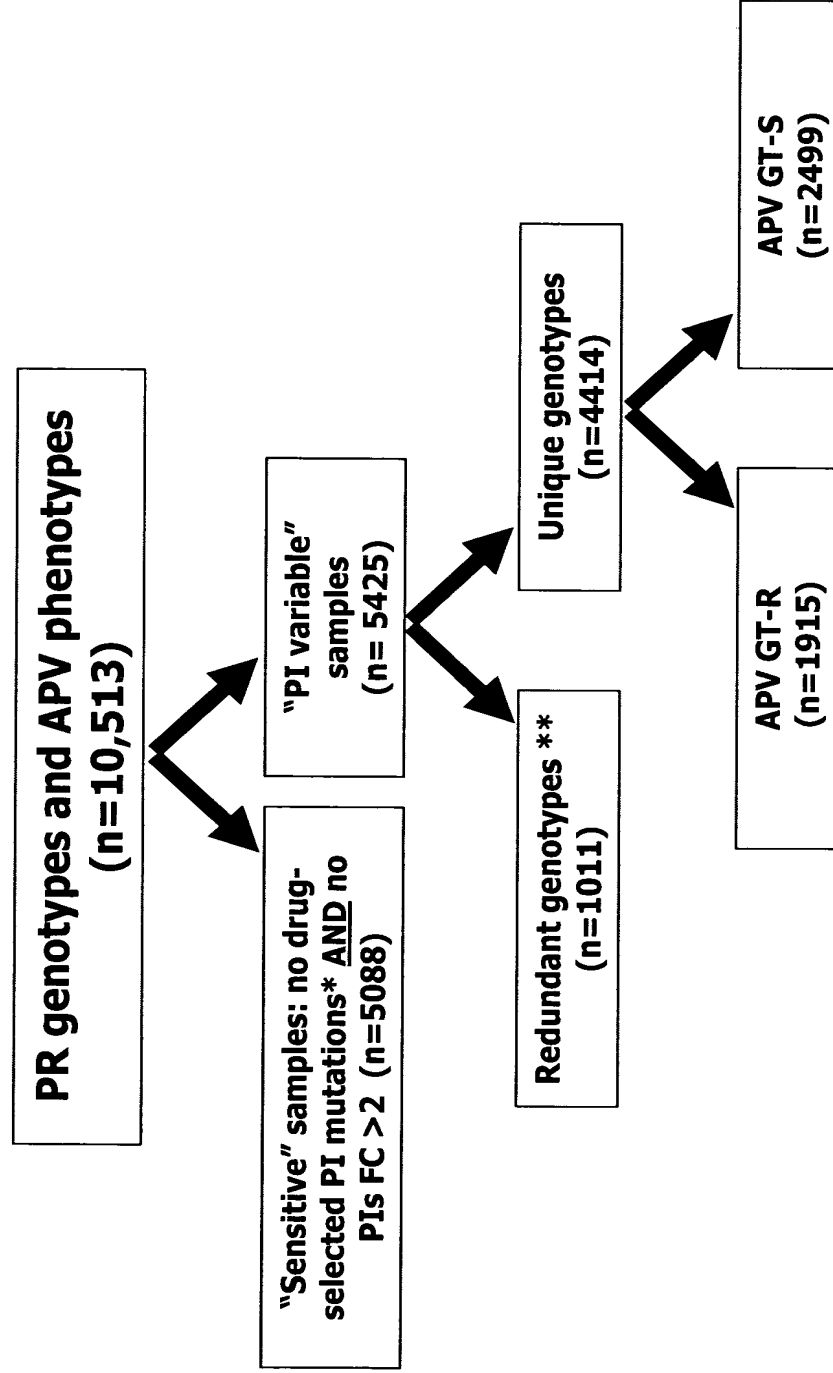


FIG. 1

FIGURE 2

Phenotype-Genotype Data Analysis



* drug-selected PI mutations: 23, 24, 30, 32, 33F, 46, 48, 50, 53, 54, 82 (except 82I), 84, 88, 90

** samples with the same PR genotype

FIGURE 3A

SEQ. ID. NO: 1: NL4-3 HIV Protease Amino Acid Sequence

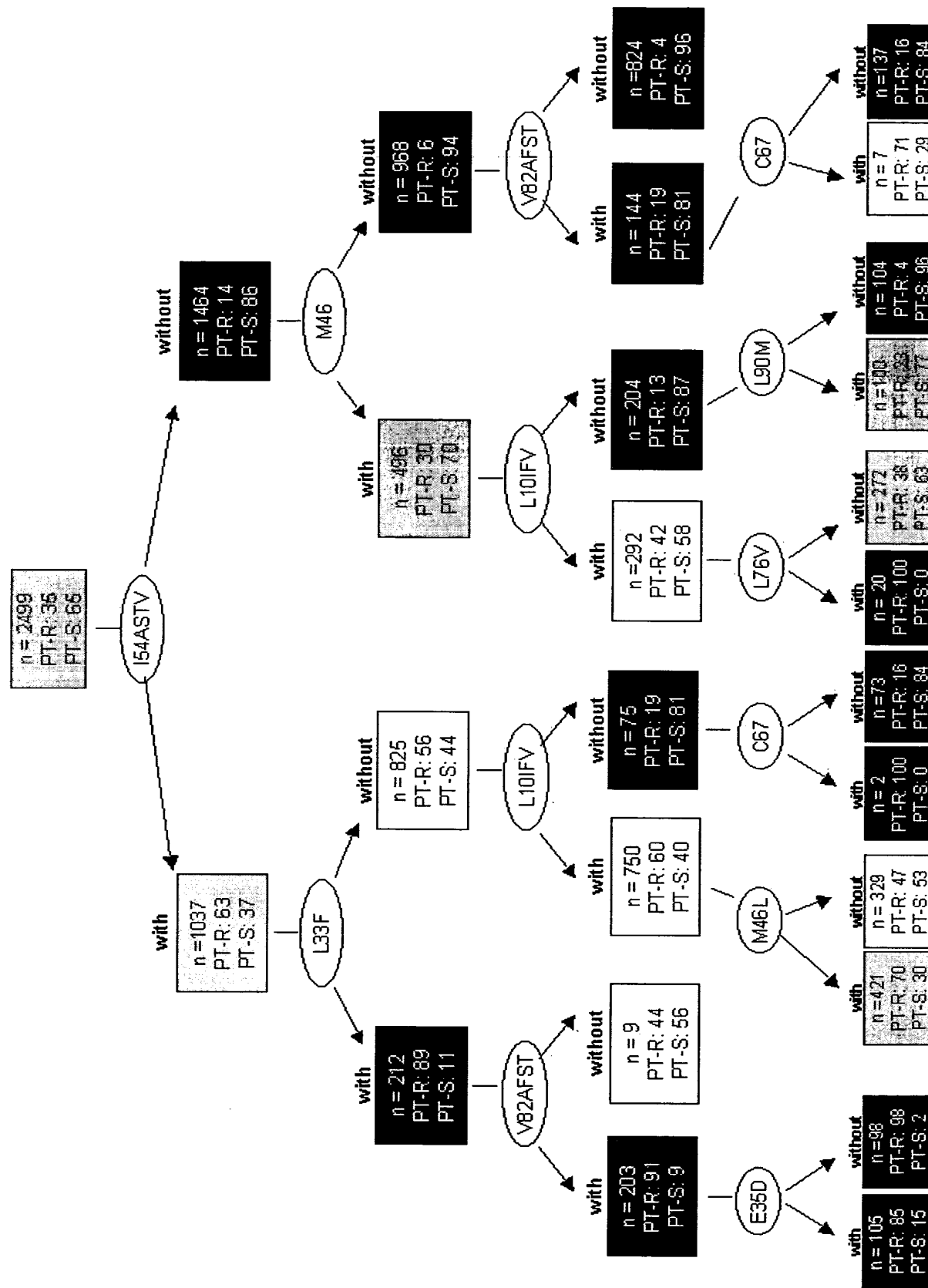
PQITLWQRPL VTIKIGGQLK EALLDTGADD TVLEEMNLPG RWKPKMIGGI
GGFIKVRQYD QILIEICGHK AIGTVLVGPT PVNIIGRNLL TQIGCTLNF

FIGURE 3B

SEQ. ID. NO: 2: NL4-3 HIV Protease Gene Nucleotide Sequence

1-10 cct cag atc act ctt tgg cag cga ccc ctc
11-20 gtc aca ata aag ata ggg ggg caa tta aag
21-30 gaa gct cta tta gat aca gga gca gat gat
31-40 aca gta tta gaa gaa atg aat ttg cca gga
41-50 aga tgg aaa cca aaa atg ata ggg gga att
51-60 gga ggt ttt atc aaa gta aga cag tat gat
61-70 cag ata ctc ata gaa atc tgc gga cat aaa
71-80 gct ata ggt aca gta tta gta gga cct aca
81-90 cct gtc aac ata att gga aga aat ctg ttg
91-99 act cag att ggc tgc act tta aat ttt

FIGURE 4



Predictive combinations

Strong (>80% R): (33, 54, 82), (54, 67), (10, 46, 76)

Moderate (60-80% R): (10, 46, 54), (67, 82)



Increasing proportion of resistant samples

	10I	10F	11X	24I	33F	34Q	35D	43T	46I	46L	47V	48M	48V	53L	54A	54S	54T	54V	58E	67	71L	71V	73X	76V	82A	82F	82S	90M	91A
10I																													
10F	3 (47)		14 (42)	4.7 (172)	14.1 (161)	4.4 (30)	2.5 (463)	6.9 (116)	3.3 (395)	4.9 (229)	10.9 (27)	41.6 (23)	4.3 (182)	4.5 (146)	10 (44)	35.9 (40)	9.7 (49)	3.1 (646)	6.2 (137)	28.3 (16)	3 (576)	3 (254)	58.3 (32)	3.5 (653)	12.5 (76)	5.1 (48)	2.2 (704)	15.1 (16)	10I
11X				6.8 (37)	7.6 (45)			6 (25)	2.9 (79)	4.8 (46)				6.4 (22)	4.5 (116)			7.2 (24)	20.8 (12)		3.3 (64)	11 (34)	17 (10)	4.2 (100)		16.9 (11)	3.3 (123)		10F
24I	4.7 (172)	6.8 (37)			24.6 (42)			17 (30)	17.9 (21)	24.6 (14)	22.7 (26)			22.7 (26)				71.8 (39)	20.8 (24)		12.6 (46)	22.7 (26)		76.3 (43)		13.2 (48)		11X	
33F	14.1 (161)	7.6 (45)	22.7 (26)	24.6 (42)				8.4 (36)	3.1 (116)	5.8 (77)				12.1 (37)				4.8 (169)	13.2 (48)		4 (109)	22.7 (26)		5.1 (159)		11.3 (21)		24I	
34Q	4.4 (30)							46.3 (51)	18.9 (55)	20.8 (64)	22.7 (13)			20.8 (12)	26.4 (15)			12.8 (171)	13.2 (48)		14.2 (136)	30.2 (66)	22.7 (13)	17 (180)	22.7 (13)	10.4 (13)	9.4 (150)	17 (10)	33F
35D	2.5 (463)													10.4 (13)							4.8 (31)			5 (29)		6.3 (28)		34Q	
43T	6.9 (116)	6 (25)	22.7 (26)	46.3 (51)				9.7 (88)	2.7 (215)	4.2 (138)	10.4 (13)	22.7 (13)		28.3 (16)	7.1 (19)	22.7 (13)		3.7 (399)	4.2 (96)		1.9 (412)	2.9 (143)	29.3 (33)	3.6 (340)	8.7 (45)	5.9 (29)	1.8 (500)	35D	
46I	3.3 (395)	2.9 (79)	17.5 (21)	18.9 (55)				7 (52)	17 (50)	35.9 (20)				14.2 (34)	22.7 (13)			8.2 (128)	5.9 (74)		6.6 (80)	10.7 (20)	22.7 (13)	9.1 (128)	13.2 (16)	8.4 (82)		43T	
46L	4.9 (229)	4.8 (46)	24.6 (14)	5.8 (77)				17 (50)						7.1 (72)	11.3 (14)	22.7 (13)		3.6 (288)	11.8 (59)		2.8 (282)	3.2 (171)	11.6 (50)	4.2 (250)	20.3 (47)	2.2 (400)	2.2 (400)	46I	
47V	10.9 (27)							35.9 (20)						7.1 (38)	22.7 (13)			5.1 (232)	11.8 (59)		4.6 (198)	4.5 (64)			11.3 (14)	4.8 (191)		46L	
48M	41.6 (23)							35.9 (20)						28.3 (16)	7.1 (19)			17 (20)	22.7 (13)		14.2 (17)		16.1 (19)					47V	
48V	4.3 (182)							22.7 (13)						28.3 (16)	7.1 (19)			22.7 (13)	22.7 (13)		22.7 (13)		34 (19)					48M	
53L	4.5 (146)	6.4 (22)	22.7 (26)	12.1 (37)	24.6 (56)	10.4 (13)	6 (43)	14.2 (34)	6.1 (72)	7.1 (38)	22.7 (13)			10.4 (13)	33.1 (37)	9.7 (49)		2.6 (98)	5.7 (28)		8.2 (115)	10.4 (13)	4.8 (191)			3.5 (100)	48V		
54A	10 (44)	4.5 (116)	20.8 (12)	20.8 (12)			7.1 (19)	22.7 (13)	11.3 (14)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					5.5 (161)	14.2 (17)		4.2 (128)	6.9 (66)	5.8 (130)	22.7 (13)		4.1 (137)	53L		
54S	35.9 (40)						22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					9.1 (25)			9.1 (25)		12.1 (37)			45.3 (25)	54A		
54T	9.7 (49)						22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					32.1 (36)			22.7 (13)		34 (19)			2.2 (400)	2.2 (400)	46I	
54V	3.1 (646)						22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					3.1 (653)			3.4 (529)	5.7 (177)	20.1 (35)	3.1 (652)	17 (60)	5.3 (61)	3.7 (554)	13.9 (25)	54V
58E	6.2 (137)	7.2 (24)	20.8 (12)	20.8 (12)			4.2 (96)	5.9 (74)	11.8 (56)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					6.5 (137)			6.7 (100)	23.3 (40)	20.8 (12)	9.5 (121)	22.7 (13)	2.2 (400)	4.7 (142)	58E	
67	20.8 (12)																	3.1 (653)	10.4 (13)							2.3 (66)		67	
71L	28.3 (16)							22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)																71L
71V	3 (576)	3.3 (84)	12.6 (46)	4 (109)	14.2 (136)	1.9 (412)	6.6 (80)	2.8 (282)	4.8 (199)	14.2 (17)	22.7 (13)	28.3 (16)	10.4 (13)					6.7 (100)			2.4 (230)	16.4 (29)	4.2 (493)	25.4 (44)	5.8 (49)	2.2 (606)	2.2 (606)	2.2 (606)	71V
73X	3 (254)	11 (34)	22.7 (26)	22.7 (26)	30.2 (66)	2.9 (143)	10.7 (20)	3.2 (171)	4.5 (54)					6.9 (66)	22.7 (13)	9.7 (49)		5.7 (177)	23.3 (40)		2.4 (230)			6.1 (148)	9.4 (12)	2.1 (329)		73X	
76V	56.6 (32)	17 (10)					29.3 (33)	22.7 (13)	11.6 (50)					10.4 (13)				20.1 (35)	20.8 (12)		16.4 (29)						25.5 (29)		76V
82A	3.5 (653)	4.2 (100)	76.3 (43)	5.1 (159)	5 (26)	3.6 (340)	9.1 (28)	4.2 (250)	4.4 (271)	16.1 (19)	34 (19)	4.8 (191)	5.8 (139)	12.1 (37)	30.8 (41)	9.4 (54)		3.1 (652)	9.5 (121)	5.1 (26)	4.2 (493)	8.1 (148)	10.9 (27)		8 (21)	3.6 (464)	20.6 (24)	82A	
82F	12.5 (76)						8.7 (45)	20.3 (47)	11.3 (14)					22.7 (13)				17 (60)	22.7 (13)		25.8 (44)		22.7 (13)			17.9 (63)		82F	
82S	5.1 (48)	18.9 (11)					13.2 (16)											5.3 (61)	22.7 (13)		5.8 (49)	9.4 (12)		8 (21)			5.2 (34)		82S
90M	2.2 (704)	3.3 (123)	13.2 (46)				1.8 (500)	8.4 (82)	2.2 (400)	4.8 (191)	32.1 (18)	22.7 (13)	3.5 (100)	4.1 (137)	45.3 (25)	22.7 (13)		3.7 (534)	4.7 (142)	2.3 (66)	2.2 (606)	2.1 (328)	25.5 (29)	3.6 (464)	17.9 (63)	5.2 (34)	28.4 (15)	90M	
91A	15.1 (16)							22.7 (13)	22.7 (13)	22.7 (13)	22.7 (13)	28.3 (16)	10.4 (13)					13.9 (25)			22.7 (13)								91A

FIGURE 5

FIGURE 6

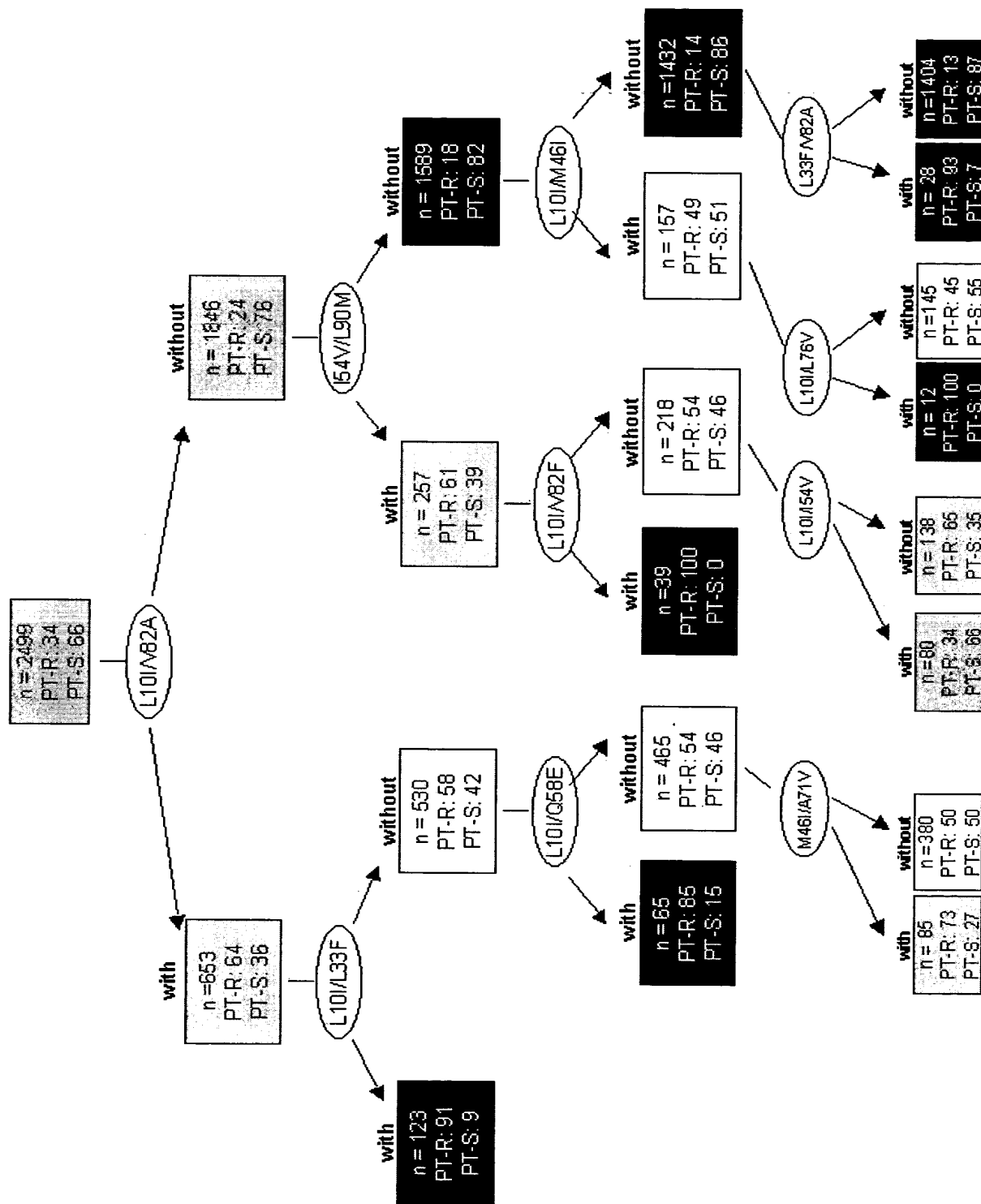
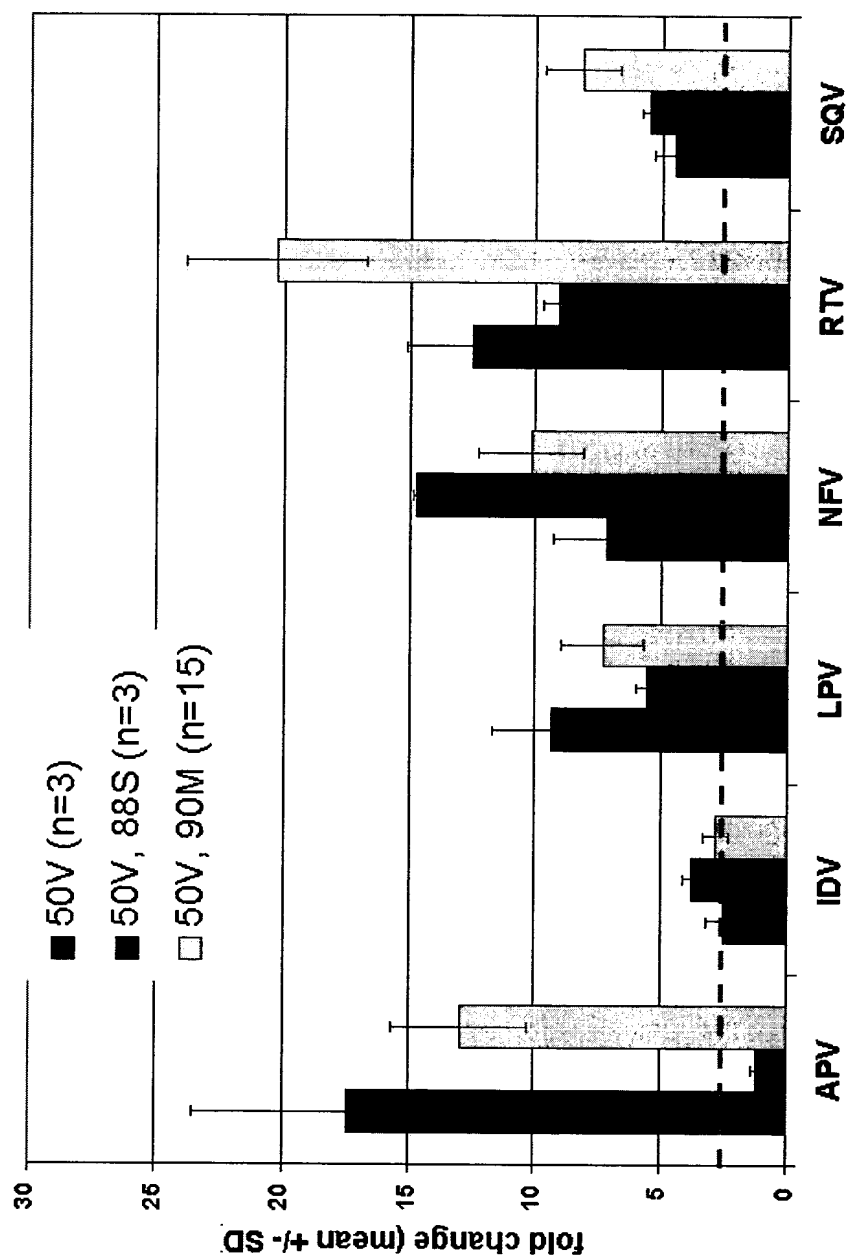


FIGURE 7



additional mutations present:
 L10I, I13V, E35D, M36I, R41K, L63P, A71V